UV Lamps

Key features
Easy to handle
Single or dual wavelength
Long live filter and high UV output
Ondulex® reflector for optimum UV irradiance
Lamp stand or holder to add versatility

Description

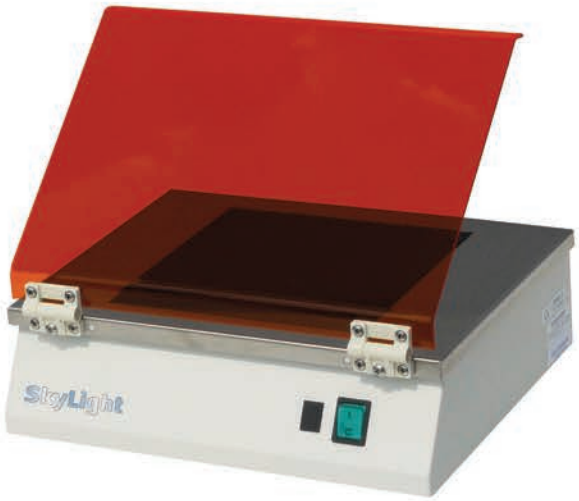
The Vilber Lourmat lamps are provided in 254, 312, 365 nm or combined. The unique filter minimizes white light interference allowing you to easily detect weak fluorescence.

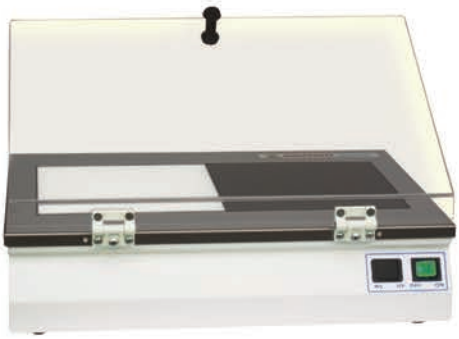
The filter has unlimited life expectancy for 312 and 365nm (3000 hours for 254 nm).

Ordering codes

Code	Tubes (Watt)	nm	µW/cm²
VL215-L	2x15 W	365	2300
VL215-C	2x15 W	254	1780
VL215-M	2x15 W	312	3000
VL215-LC	2x15 W	365/254	1350/1100
VL215-LM	2x15 W	365/312	1350/1800
VL215-MC	2x15 W	312/254	1800/930
VL115-L	1x15 W	365	1100
VL115-C	1x15 W	254	1000
VL115-M	1x15 W	312	1000
VL8-L	1x8 W	365	800
VL8-C	1x8 W	254	820
VL8-M	1x8 W	312	790
VL8-LC	2x8 W	365/254	720/520
VL8-LM	2x8 W	365/312	720/660
VL8-MC	2x8 W	312/254	660/520
VL6-L	1x6 W	365	800
VL6-C	1x6 W	254	820
VL6-LC	2x6 W	365/254	720/520
VL4-L	1x4 W	365	400
VL4-C	1x4 W	254	340
VL4-LC	2x4 W	365/254	350/265

UV Tables





Multi-applications transilluminator>
Invisible UV tubes - No background light
Enhanced signal imaging & contrast visualization of the faint bands
Adjustable dual intensity selector (100%-70%)
Unlimited filter life expectancy
Adjustable UV safety screen
Ondulex ® reflector for higher UV output
100/115/230 volt, 50/60 Hz

Description

Multi-applications
The Super-Bright UV table is a multi-applications transilluminator which works for an extended range of dyes including SYBR-Green®, Ethidium bromide, SYBR Gold ®, SYBR Safe®, Sypro Orange®, Sypro Ruby®, Gel Star ® ...

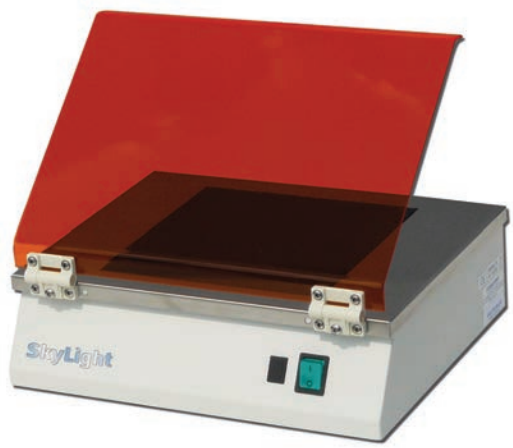
The innovative Super-Bright filter stops all the visible light emitted by the tubes, making the transilluminator simply perfect for a large number of applications.

Enchanced results
As the UV tubes are no more visible, the Super-Bright improves dramatically the quality of gel visualization and documentation
By contrast, your eyes can easily see the very faint bands. The Super-Bright excitation light is far-off the sample fluorescence. This ensures the total transmission of the SYBR-Green® or ethidium bromide signal if combined with our unique F440 camera filter.
For SYBR-Green®, the signal is then 25% higher compared to a standard configuration.

Ordering codes

Codes	Description	nm	Filter (mm)	Tubes	Intensity (µW/cm2)
VLECX-26MX	High / Low intensity	312	210 x 260	6 x 8-watt	9 000
VLETX-26MX	High / Low intensity	312	210 x 260	6 x 15-watt	10 000
VLTCP-26LMX	High / Low intensity	365/312	210 x 260	6 x 15-watt	10 000

The Vilber SKYLIGHT SUPER-BLUE is a new technology ideal for
Sybr Safe®
Gel-Red®
Sypro Ruby®
Gel-Star®
Sypro Orange®
Sybr Gold®
Sybr Green® I & II and eGFP®
amongst others



Description

Technology
The SKYLIGHT SUPER-BLUE table is based on the latest blue LED technology for an unparalleled light uniformity. The table incorporates 270 Light Emitting Devices in an optimized array to give consistent intensity across the table. This uniform light is then filtered with a narrow excitation filter to obtain an excitation peak at 470nm and to eliminate light interference on the resulting image. On the surface, the protection glass allows you to cut the gel without damaging the table.

Advantages
The new Vilber SKYLIGHT SUPER-BLUE transilluminator eliminates the damage caused by UV light on DNA and RNA gels. It also improves cloning efficiency dramatically by eliminating the effects of UV-induced nicking or crosslinking, oftenencountered during the purification of DNA from gels for further use.

Ordering codes

Codes	Description	Filter (mm)	Light device
ECX-F20. Blue	SkyLight technology	200 x200	Led technology

UV Master ® technology
Stainless steel frame
Adjustable UV safety screen
Ondulex ® reflector for higher UV output
Unlimited filter life expectancy for 312 and 365nm
Adjustable dual intensity selector (100%-70%)
100/115/230 volt, 50/60 Hz

Description

UV standard
The ECX transilluminator is both compact and economical for laboratories with budget in mind. The fully adjustable UV safety screen can be positioned to suit the operator's viewing angle against exposure to harmful UV rays. The High/Low intensity selection is ideal to switch from short gel visualization to longer preparative work.

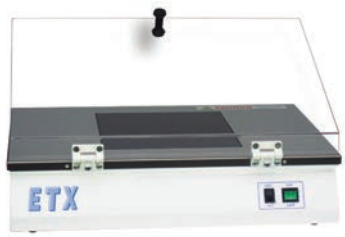
Ordering codes

Code	Description	nm	Filter (mm)	Tubes	Intensity (µW/cm2)
VLECX-15M	High / Low intensity	312	150 x 150	4 x 8-watt	10 000
VLECX-15C	High / Low intensity	254	150 x 150	4 x 8-watt	7 000
VLECX-20M	High / Low intensity	312	200 x 200	6 x 8-watt	10 000
VLECX-20C	High / Low intensity	254	200 x 200	6 x 8-watt	7 000
VLECX-20L	High / Low intensity	365	200 x 200	6 x 8-watt	7 000
VLECX-26M	High / Low intensity	312	210 x 260	6 x 8-watt	10 000
VLECX-26C	High / Low intensity	254	210 x 260	6 x 8-watt	7 000

ETX High Itensity

UV Transilluminator

Dual intensity selector (100%-70%)
6 x 15W UV tube
UV safety screen
Air cooling fan
UV Master ® technology
Powerful UV output ideal for the visualisation of faint bands.
Adjustable dual intensity selector (100%-70%)
Stainless steel frame
Adjustable UV safety screen
Ondulex ® reflector for higher
UV output
Unlimited filter life expectancy for
312 and 365nm
100/115/230 volt, 50/60 Hz



Description

SUPER HIGH SIGNAL

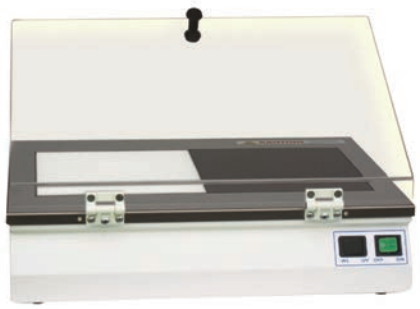
The ETX 15-watt transilluminator has very high UV output to obtain more signal compared to a standard 8-watt transilluminator. This model has been specifically designed to meet demand for analytical and preparative DNA electrophoresis. The ETX model is available in 254nm, 312 nm and 365nm.

Ordering codes

Code	Description	nm	Filter (mm)	Tubes	Intensity (µW/cm2)
VLETX-20M	High / Low intensity	312	200 x 200	6 x 15-watt	10600
VLETX-20C	High / Low intensity	254	200 x 200	6 x 15-watt	7800
VLETX-20L	High / Low intensity	365	200 x 200	6 x 15-watt	7000
VLETX-26M	High / Low intensity	312	210 x 260	6 x 15-watt	10600
VLETX-26C	High / Low intensity	254	210 x 260	6 x 15-watt	7800

UV / WHITE LIGHT TRANSILLUMINATOR

- Two models in one!
- The UV / white light tables feature two 200 x 200 mm illumination areas.
- The UV side is ideal for RNA and DNA visualization.
- The white light side can be used for protein gels, autoradi grams or microtitration plates.



Ordering codes

Code	Description	sample surface (mm)	UV tubes	LV tubes	Intensity (µW/cm²)
VLTFP-MWL	312nm / white light	2x (200 x 200)	6 x 8-watt	2 x 8-watt	10000
VLTFP-CWL	254nm / white light	2x (200 x 200)	6 x 8-watt	2 x 8-watt	7000
VLTFP-LWL	365nm / white light	2x (200 x 200)	6 x 8-watt	2 x 8-watt	7000

MULTIBAND TRANSILLUMINATOR

- The multiband transilluminator accommodates two UV wavelengths in one single transilluminator.
- This versatile model is ideal for a wide range of applications requiring different wavelengths. It can be used for both visualization and documentation..

Ordering codes

Code	Description	sample surface (mm)	UV tubes	Intensity (µW/cm²)
VLTCP-20LC	365nm / 254nm – 8-watt	200 x 200	(6 x 365nm) + (5 x 254nm)	7600 / 5200
VLTCP-20LM	365nm / 312nm – 8-watt	200 x 200	(6 x 365nm) + (5 x 312nm)	5400 / 6400
VLTCP-20MC	312nm / 254nm – 8-watt	200 x 200	(6 x 312nm) + (5 x 254nm)	8400 / 5200
VLTCP-26LC	365nm / 254nm – 8-watt	210 x 260	(6 x 365nm) + (5 x 254nm)	5400 / 5200
VLTCP-26LM	365nm / 312nm – 8-watt	210 x 260	(6 x 365nm) + (5 x 312nm)	7600 / 6400
VLTCP-26MC	312nm / 254nm – 8-watt	210 x 260	(6 x 312nm) + (5 x 254nm)	8500 / 5200

The CN-15 darkroom provides a large effective capacity and UV power intensity unequalled in this field. The darkrooms offer any combination of UV sources, simultaneously or not. Its key features are:

- Extra large capacity
- Black rubber curtain for easy access into the darkroom
- White-light bulb for normal observation
- UV absorber shield to protect the user from UV light
- Removable bottom panel for use with a Vilber Lourmat ETX fluorescent table

The CN-6 darkroom holds one or two hand-held UV lamps... (VL-6 model) in any of the three following wavelengths: 254, 365 or 312 nm. The darkroom is supplied without lamps and allows different lighting possibilities according to the user's choice. Its key features are:

- Large capacity
- Black rubber curtain for easy access into the darkroom
- UV absorber shield to protect the user from the UV light
- Removable lamps that can be used for hand-held applications

Ordering codes

Models	Tubes (Watt)	Wavelength(nm)	Intensity at bottom (µW/cm2)	Size W x D x H (mm)
VLCN15-LL	4 x 15-W	365	2 000	505 x 415 x 280
VLCN15-CC	4 x 15-W	254	1 750	
VLCN15-MM	4 x 15-W	312	2 500	
VLCN15-LC	4 x 15-W	365/254	1 050/900	
VLCN15-LM	4 x 15-W	365/312	1 050/1300	
VLCN15-MC	4 x 15-W	312/254	1 300/900	
VLCN6	Lamps not included			300 x 280 x 240

Feautures

- Ergonomic fusion-Patented 4° ergonomic viewing angle (“Golden Angle”)
- Optimized for use with the nucleic acid and protein fluorescent dyes.
- Blue light source good for 30,000 hours.
- No risk of UV damage for high quality work experience.
- Smart power-saving function - Automatic power shut-off option at 5 minutes.
- Gel-cutting knife - Cut out the target from the gel for further experiment.

Description

BLooK is a remarkable blue light LED transilluminator for the detection of nucleic acids or protein under non-UV conditions. The wavelength of the special blue LED lights is 470 nm (fig 1), hence no damage to your nucleic acids or protein. Also, since UV is not used, there is no need for any special personal eye or skin protection. The blue LED lights are arranged under the viewing area (200 × 120 mm). An amber filter, on hinges, is lowered into position once your gel is mounted. The stained gel is now ready for viewing. This instrument has a specially designed ergonomic 4° angle, so users can easily sit on a chair to see the experiment results.

BLooK is designed to view the gel after running electrophoresis on the gel stained with the Novel Juice, Novel Green, Novel Green Plus, Nimble Juice or Nimble Juice R TYPE. Further, it is perfectly designed for OnePCR ™, OnePCR ™ HiFi, OnePCR ™ HotStar, OnePCR ™ Plus, OneMARK B, and OneMARK 100, which contains the fluorescent stain compatible with the blue light wavelength. However, BLooK is not suitable for ethidium bromide.

Specifications

Code	Description
Unit Dimensions (W x L x H)	295 x 215 x 42 mm
Gel viewing dimensions (W x L x H)	200 x 120 mm
Weight (g)	1280
Input voltage	100-240Vac, 50/60 Hz
Input current	1.4A
LED source	Built-in blue light LED module
LED life (hours)	>30.000
Emission maxima	470
Store temperature	25°C
Operating temperature	Ambient to 40°C
Auto shut-off (min)	5
Filter type	Amber filter (ideal for Novel Juice, Novel Green, Novel Green Plus, OnePCR ™, OnePCR ™ Hifi, OnePCR ™ Hotstar, OnePCR ™ Plus, OneMark B, OneMARK 100, Nimble Juice, Nimble Juice RType)

Contents

- BLooK LED Transilluminator
- Smartphone darkroom
- Power Cord
- Gel-cutting knife
- Replacement blade

Ordering codes

Code	Description
BLOOK	LED gel documentation table
NOVELJUICE	Ultra-sensitive DNA staining reagent

UV accessories

Face shield and goggle

UV radiation is dangerous for unprotected eyes and skin. Users must protect themselves against UV radiation by wearing glasses or face shields. The MP-80 is recommended for the protection of the eye and the face.

The MP-800 is a face shield with two lateral protections to cover the operator ears in addition to his eyes and face.
Comfortable and efficient, the LP-70 glasses provide total protection for the eyes.

Code	Description
VLMP800	MP-800 UV face shield with lateral protection
VLMP80	MP-80 UV face shield
VLLP70	UV glasses

MP-800

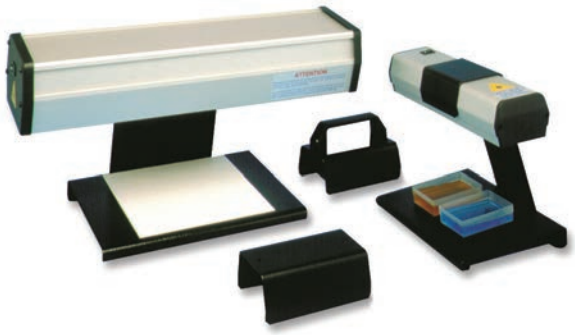
MP-80

LP-70

Lamp Stands

The lamp stands or the handlers give you ease of use and versatility. Lamp handle and bracket let you conveniently mount your lamp below a horizontal surface. The lamp stand frees your hands.

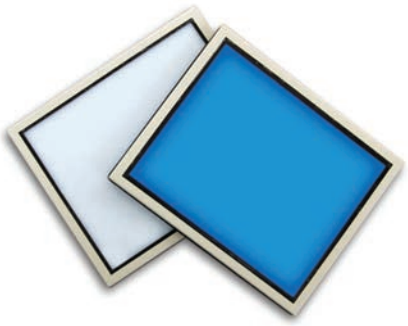
Code	Description
VLSMA	Handle for VL8, VL6 and VL4 lamps
VLSMU	Bracket for VL8, VL6 and VL4 lamps
VLS6	Stand for VL8, VL6 and VL4 lamps
VLS30	Stand for VL215 and VL115 lamps



Conversion screen

The conversion screen converts the 312 nm UV light into blue or white light. The FC-26.WL converts UV to white light and is ideal for autoradiographs or protein gels. The FC-26.Blue converts UV to blue light (480 nm) and it could be used for application such as GFP II, SYBR Safe®, SYBR Green® or SYPRO Orange®.

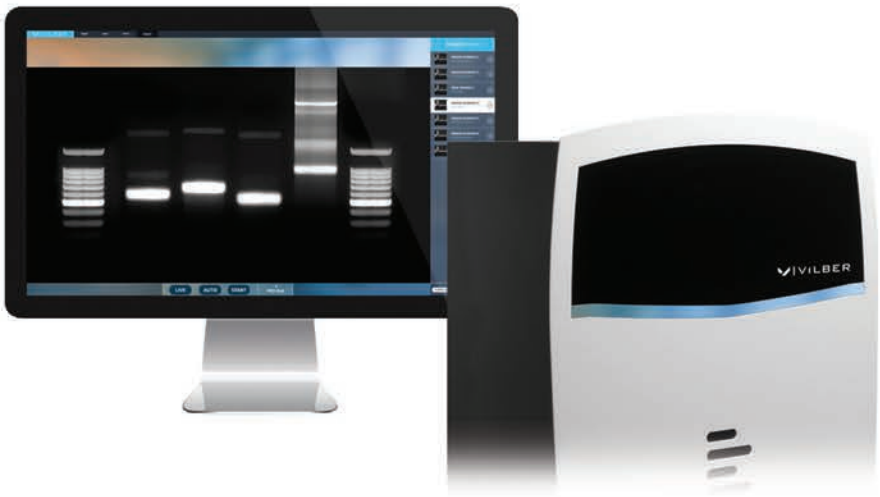
Code	Description
VLFC26-WL	UV/WL conversion screen
VLFC26-BLUE	UV/BLUE conversion screen



Replacement UV tubes and starters

Code	Description	Length
VLT15-M	UV tube, 15 W, 312 nm	451 mm
VLT15-C	UV tube, 15 W, 254 nm	451 mm
VLT15-L	UV tube, 15 W, 365 nm	451 mm
VLT15-WL	White-light tube, 15 W	451 mm
VLT8-M	UV tube, 8 W, 312 nm	302 mm
VLT8-C	UV tube, 8 W, 254 nm	302 mm
VLT8-L	UV tube, 8 W, 365 nm	302 mm
VLT8-WL	White-light tube, 8 W	302 mm
VLT6-LC	UV tube, 6 W, 365/254 nm	226 mm
VLT6-C	UV tube, 6 W, 254 nm	226 mm
VLT6-L	UV tube, 6 W, 365 nm	226 mm
VLT6-WL	White-light tube, 6 W	226 mm
VLT4-C	UV tube, 4 W, 254 nm	136 mm
VLT4-L	UV tube, 4 W, 365 nm	136 mm
VLST151	Starter for 4...20W tube	

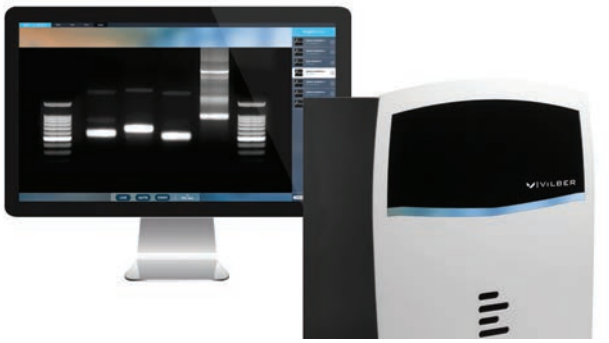
Gel Documentation



NO FRILLS
Simplicity And Performance At A Budget

Smart Darkroom technology:
- Software control of the lighting
- White light led panels with automatic intensity adjustment
- UV cut-off filter
- Fix position transilluminator with optional protection screen

Steel and stainless steel darkroom for long lasting robustness.
Wide access door with UV safety shut-off.



Description

Performance At A Budget
The Bio-Print is the ideal system for laboratories that do not want to compromise performance with budget constraints.

Applications
DNA and RNA gels and fluorescence stain imaging:
- Ethidium bromide, Sybr-Safe, Sybr-Green, Gel-Red, Gel-Green, Sybr-Gold, GFP, Pro-Q Emerald, Sypro ruby, FITC, DAPI
- Colorimetric stained protein gels, X-Ray film, autorads, SSCP gels, colony dish and flask imaging and other EPI white light applications
- Coomassie blue, Silver stain, Ponceau S Red, Copper stain…

Blue light conversion screen for DNA/RNA detection (avoid «nicking» DNA):
- Sybr-Safe, Sybr-Green, eGFP

CX4 camera:
- Scientific grade camera - Made in Germany
- 2 megapixels resolution extendable to 7,6 megapixels
- Passive cooling
- 16-bit – 65 536 grey levels
- USB-3 connection
- Motorized zoom lens with feedback
- Field of view: 20x20cm

Key features

The Ideal Gel-Doc
- Add a white light conversion plate for colorimetric stained protein gels, X-ray film imaging, autorads, SSCP gels, colony dish and flask imaging
- Add a blue light conversion plate for blue light DNA/RNA/ Protein fluorescence

Performance At A Budget
- Scientific camera made in Germany
- Motorized zoom lens
- USB-3 interface
- Camera passive cooling to maximize the signal to noise ratio
- Auto-exposure and auto-focus
- Automatic light illumination control

Complete Software Solution
- Free software for image editing and image analysis: molecular weight calculation, band quantification & distance calculation
- Scientific TIFF file or proprietary file format
- Full GLP compliance

No Compromise On Quality
- High standard in a compact design
- Epi white light LED panel
- Stainless steel, aluminium and steel darkroom for the best robustness
- Proven camera robustness
- Design to last

Ordering codes

Code	Darkroom	UV table	Zoom	EPI
VLBPCX4-20M	**CN-900**	20x20cm, 312nm	motorized	WL
VLBPCX4-20MX	**CN-900**	20x20cm, 312nm, Super-Bright	motorized	WL

Intuitive Software

The Doc-Print software has rich features and guides you into the advanced functions in a very ergonomically designed user interface. The simple and self-understandable menu is ideal in a multi-user environment.

Designed by molecular biologists the software is very easy to use: Just one click is necessary to get the optimum gel image.

Description

EASY & FUN

The Doc-Print is a standalone imaging system dedicated to basic gel documentation. Thanks to the auto-exposure, the acquisition process is as quick as instinctive.

Applications

DNA and RNA gels and fluorescence stain imaging:

- Ethidium bromide, Sybr-Safe, Sybr-Green, Gel-Red, Gel-Green, Sybr-Gold, GFP, Pro-Q Emerald, Sypro ruby, FITC, DAPI
- Colorimetric stained protein gels, X-Ray film, autorads, SSCP gels, colony dish and flask imaging and other EPI white light applications
- Coomassie blue, Silver stain, Ponceau S Red, Copper stain…

Blue light conversion screen for DNA/RNA detection (avoid «nicking» DNA)

- Sybr Safe, Sybr Green, eGFP

Camera & Optics

- Scientific grade camera
- 2 megapixels
- Passive cooling
- 16-bit – 65 536 grey levels
- USB-2 connection

Key features

- Intuitive user interface
- Standalone system: no computer required
- Auto-exposure
- Print or save on an external drive via the USB port
- Scientific TIFF file or proprietary file format8 inch LCD screen
- Connect to a thermal printer to get vibrant glossy printouts
- Full GLP compliance
- Images compatible to Mac or PC
- Add a white light conversion plate for colorimetric stained protein gels, X-ray film imaging, autorads, SSCP gels, colony dish and flask imaging
- Add a blue light conversion plate for blue light DNA/RNA/Protein fluorescence
- **Free software for image acquisition with full GLP compliance. Molecular weight calculation, band quantification, colony counting, distance calculation, text annotation and image enhancement included.**

Ordering codes

Code	Darkroom	UV table
VLDP-HOOD	**HC-40 hood**	none
VLDP17-26M	**CN-1700**	21x26cm, 312 nm
VLDP17-26MX	**CN-1700**	21x26cm, 312 nm SuperBright

ABSOLUTE READINGS
The instrument shows the actual value without compensating to a reference temperature.

AC-ADAPTOR
An internationally approved mains-plug with built-in low voltage transformer for a safe supply of energy to instruments.

ACCURACY
Maximum electronic error of the measured unit. The accuracy of an electrochemical determination such as pH, conductivity, dissolved oxygen & ion-selective measurements is mainly limited by the electrodes and calibration solutions.

ALARM
An alert sounds or a relay is closed when readings stray outside pre-set limits.

ALTERNATING DISPLAY
The meter can automatically scan all selected inputs for display or transmission to a computer or printer.

AUTOMATIC CROSS-OVER
When the resistance of an electrophoresis apparatus changes during a run, the power supply is able to switch automatically between constant voltage, constant current and constant power.

BATTERY CAPACITY
Percentage of remaining battery capacity.

BAUD RATE
Communication speed, in bits/second (b/s), of the digital interface (RS232).

BUFFER
A solution of buffered species where the pH tends to remain constant if diluted or concentrated.

Pre-programmed pH buffers: 1.68/ 2.00/ 4.00/ 4.01/ 6.87/ 7.00/ 9.18/ 9.21/ 10.01/ 12.00/ 12.45.

User specified pH buffers: special tables can be stored for future calibrations.

CALIBRATION REMINDER
A timed calibration procedure facilitates considerably GLP management by prompting the user when his instrument needs to be recalibrated.

CAPACITIVE COMPENSATION
The capacity of the electrode and its cable falsifies the measurement at very low conductivities. A capacity compensation allows to compensate for these errors.

CELL
The 2-pole design is the most commonly used conductivity cell. The electrodes are made of platinised platinum. The cell must be replaced or re-platinised if the plates become fouled.

The 4-pole design reduces considerably the problems of polarisation and fouling. By utilising four electrodes, no current flows through the measuring circuit. The AC-current is only applied to the outer pair of rings allowing the inner pair of electrodes to measure the voltage without any polarisation effects.

CELL CONSTANT
The cell constant (cm-1) of a conductivity electrode is determined by the length (cm) of the column of liquid between the plates divided by the area (cm2) of the plates.

CONCENTRATION
Concentration measurement with an ion selective electrode requires a minimum of chemical know-how to make successful ion selective determinations.

CONDUCTIVITY
The conductivity is a measure of the solution's ability to conduct electric current. The basic unit is Siemens/cm (S/cm). It is measured by an electrode consisting of two platinum plates to which an alternating potential is applied. The corresponding current is proportional to the conductivity of the ionic solution in which the electrode is dipped.

DATA-ACQUISITION
Connect the instrument to a computer via an USB, RS232, RS485 interface for bi-directional communication capabilities. Most instruments require no special software and feature an advanced easy to use data acquisition fully compatible with spread-sheet.

DATA-LOGGING
Stores automatically or manually the measured values (+ °C & time/date) in a built-in non-volatile memory.

GLP
Good Laboratory Practices procedures help to increase accuracy through calibration reports.

GROUND LEAKAGE
Leaking or dirty electrophoresis apparatus are dangerous, since the applied high voltage may result in an electric current flowing through the operator to the ground.

IDENTIFICATION NUMBER
Several instruments connected to the same computer can easily be identified when specific numbers are allocated to them.

INPUT
Several types of connectors are used according to the application. Check the specifications of meter-input and electrode-plug on their compatibility.

ISO-pH
Zero-point of a pH electrode. A new pH electrode has an ISO-pH between 6.5 and 7.5 pH.

MINIMUM/MAXIMUM MEMORY
Recalls the lowest/highest values ever measured since the last calibration.

mV
Electrode potential is read in mV.

ON/OFF CONTROL
Simple control system in which the relays are continuously closed when a pre-set level is exceeded.

ORP
Oxido-Reduction-Potential (the reducing or oxidising capability of a solution).

PASSWORD PROTECTION
For tamper-proof storage of parameters and data, a secret personal code protects the instrument against any undesired access.

pH
The pH is a measurement for the acidity or alkalinity of a solution. In pure water the hydrogen ion (H+) and hydroxyl ion (OH-) concentrations are equal at 10-7 M (25°C). To provide a convenient and effective means of defining acidity and alkalinity, the negative logarithm of hydrogen ion activity is used. The pH is calculated from the potential between a glass and a reference electrode (Nernst equation).

PROPORTIONAL CONTROL
The control relay will pulse at a rate proportional to the regulation difference. When the difference is superior to a pre-set maximum value, the relay is continuously activated. However, when reaching a pre-set level the wait-time between the pulses will increase gradually in order to perform very accurate regulations.

Pt100
Platinum resistance thermometer (100 Ω at 0°C). It requires a low resistance cable for highest accuracy.

Pt1000
Platinum resistance thermometer (1000 Ω at 0°C). Less errors when using longer cables.

QUALITY MANAGEMENT
Measuring equipment should be calibrated on a regular basis (GLP). The accuracy of measurements is only limited by the electrodes and calibration solutions. At any moment, a complete documentation about the electrodes and calibration solutions can be printed or sent to a computer. This includes meter settings, data about the last calibration and a comparison with the previous calibration. The use of certified calibration solutions is strongly recommended. For very accurate quality measurements fresh standard solutions should be used for each calibration.

QUANTIFICATION OF VINCENT

The quantification of Vincent is a measurement for the energy stored in an organism. It expresses the maximum dissipation of energy by a chemical or biochemical reaction. The basic unit is Watt (W) but it is more convenient to use µW (micro-watt). It is calculated from the ORP, referenced against a hydrogen electrode, and the resistance.

RANGE LOCK

Allows to lock the initial conductivity measuring range when titrating in order to avoid cross-over errors due to varying measuring frequencies and linearity errors of the conductivity cell.

REAL TIME CLOCK

Shows time and date on the display.

REDOX POTENTIAL

The potential developed by a metallic electrode when placed in a solution containing a species in two different oxidation states. It is usually measured by a combination platinum electrode.

REFERENCE TEMPERATURE

Conductivity measurements are temperature dependent. Therefore, the readings should be referenced to a standard temperature.

RESISTIVITY

Electrical resistivity is the reciprocal of Conductivity. The basic unit is Ohm. cm (Ω.cm). While the ion concentration of a solution decreases, the resistivity rises up to a maximum of 18.3 MΩ.cm (absolute pure water at 25°C).

RESOLUTION

Smallest possible reading of the measured unit. More sophisticated meters allow to select the desired resolution. Unlike other meters, the CONSORT models round off the last digit rather than simply truncating digits outside the display range.

rH2

The rH2 is a measurement for the level of electronic exchanges between water and dissolved ions. It enables to study incomplete, indeterminate and very diluted aqueous redox solutions. It is defined as the negative logarithm of molecular hydrogen ion activity, calculated from the pH and the ORP referenced against a hydrogen electrode.

RS232

Digital interface, transmits the displayed values and calibration data to a printer or computer.

RS485

Allows to connect several process controllers for bi-directional communication with a computer. It allows multiple devices (up to 32) to communicate at half-duplex on a single pair of wires, plus a ground wire, at distances up to 1200 meters.

SALINITY

Salinity gives an indication of the salt content of sea water. It is calculated from the conductivity referred to 15°C. The salinity is the ratio between the total salt content (g) and the total weight of the sea water (kg). Hence salinity can be expressed in ppt (parts per thousand).

SLOPE

Percentage which relates the actual behaviour of a pH electrode to the Nernst's law. A new electrode has a slope between 95 and 100 %.

S/S RELAY

A solid-state relay contains no mechanical contacts. Long life, compact design and spark-free switching are its main advantages. It should not be used for controlling very low power loads, as the small leakage current can cause unwanted switching-on.

STABILITY INDICATION

A decimal point flashes until the electrode output remains constant, then readings can be recorded.

TDS

Total Dissolved Salts of a solution gives an indication of the total ion concentration. Due to ionic interactions within a solution, the salt concentration cannot easily be related to conductivity. As the dissolved solids are generally unknown, a TDS measurement is always referred to a solution of pure Sodium Chloride.

TEMPERATURE COEFFICIENT

Each solution has its own temperature coefficient (%/K). As this coefficient also varies with temperature, a standard conductometer cannot achieve a precise temperature compensation over a wide span of temperatures. However, a research grade meter is able to plot special temperature curves for each individual type of solutions in its non-volatile memory. Specific temperature coefficients can also be entered for special applications. For standard applications, the non-linear function for natural waters (EN27888) is used.

TEMPERATURE COMPENSATION

Corrects readings for variations in electrode response due to temperature effects.

THERMOCOUPLE

Thermocouples basically consist of two dissimilar wires (each made of a different alloy). One end is twisted or soldered to form a measuring junction. The other end is connected to a thermometer and forms the reference junction. The signal is a small voltage (µV) proportional to the temperature gradient between the measuring and reference junctions. Thermocouple probes are ideal to cover greater lengths. They also have a great temperature range and can easily pass through e.g. oven doors. Response time is faster than with Pt100 probes. Accuracy, stability and repeatability are less than with Pt100 probes.

USB

Universal Serial Bus is a standard designed to eliminate the guesswork in connecting peripherals to a computer.

VOLT-HOUR INTEGRATOR

The distance at which molecules migrate in an electrophoresis apparatus depends on the applied voltage and run-time ($\int V.dt$). In order to achieve reproducible experiments, it is recommended to use a volt-hour integrator rather than a simple timer.

ZERO POINT (Eo)

Standard pH meters assume a pH electrode to supply a zero potential at 7 pH. Electrodes for special applications (e.g. stomach pH measurements) may have a different zero point. An adjustable zero point correction feature will allow users to measure with these electrodes.

General terms

Art. 1
Unless otherwise agreed in writing, the legal relationship between the parties is governed by the present general terms, of which the customer declares to have taken cognisance, and which prevail over the customer's possible terms of purchase.

Art. 2
All quotations are without engagement. Prices do not include taxes. Any price stated is based at all times on the salaries, social charges and prices of materials obtaining on the date of the quotation. Official price modifications as arranged by legal dispositions automatically entail equivalent modifications of the prices stated in the contract. This proportional increase can also apply to part of the order or work.

Art. 3
Transport or dispatch of our goods by any means of transport is at the consignee's risk, even with carriage paid.

Art. 4
If our firm acts as an intermediary, the guarantee on the goods supplied by us is restricted to the guarantee given to us by the supplier or manufacturer. If the goods are subject to formal guarantee, defective, material will be repaired or replaced, but no claims for any other damage will be accepted.

Art. 5
All invoices are payable cash on the address of the invoice unless otherwise stipulated in the documents committing the parties or unless an expiry date is stated on the Invoice.

Art. 6
Contrary to art. 1583 of the Civil Code, any goods that are not paid in full remain our full property; in such case possible advance payments will serve as a compensation for costs and loss of profit.

Art. 7
Bills in arrears entitle us to suspend any further deliveries or services without prior notice, such to prevent debts from further increasing.

Art. 8
The supply of goods or services on a later date than the date stipulated for supply or service, if such is not caused by bad faith or a serious shortcoming of the supplier, shall never form a motive for suspending the order or the agreement, nor entitle the customer to claim any damages.

Art. 9
If default is made in cash payment or if payment is not carried out on the expiry date stated, the amount of the invoice shall bear a conventional interest of 1.5% per month as from the day on which the invoice as remitted or as from the expiry date stated, such by right and without any formal notice. Each month started shall be charged as a full month.

Art. 10
Moreover, by way of a fixed and irrevocable condition, the amount of the invoice shall be increased by 15% with a minimum of 200 EUR, by right and without formal notice, as a compensation for recovery costs of the claim (both staff and administration costs, management and follow-up of the file, influences on financial management, etc.), in application of art. 1147 C.C. and 1152 C.C.
This compensation is due apart from the moratory interests, the recoverable procedure costs and the possible compensation for material damages and loss of profit.
The parties thus agree that this compensation is fixed and that, contrary to art. 1231 C.C. It cannot be modified, even when the shortcoming is only partial.

Art. 11
Cheques and bills of exchange are only accepted as payment after their repayment. Possible costs are at the expense of the purchaser or commissioner.

Art. 12
The drawing and/or accepting bills of exchange or other transferable documents does not imply a novation or deviation from the general terms. The acceptance costs of bills of exchange are at the expense of the purchaser or commissioner.

Art. 13
If one invoice remains unpaid on its expiry date, the balance due of any other invoices, even when not expired, are immediately recoverable by right.

Art. 14
In the event of a dispute, only the courts of Turnhout, Belgium, shall have competence.

Art. 15
Any complaints regarding the supply of the goods and services shall be made on termination and be confirmed by a motivated registered letter within 8 days of the date of supply. These complaints do not suspend the obligation of payment.

Art. 16
Remarks and restrictions concerning the invoice and/or the general terms therein stated shall be transmitted to us by motivated registered letter within 8 days of date of invoice; for the settlement of disputes this period amounts to 30 days. If an order form is signed by a purchaser or commissioner, the regulations of the general terms stated on the order form shall apply.